

(12) UK Patent Application (19) GB (11) 2 341 427 (13) A

(43) Date of A Publication 15.03.2000

(21) Application No 9819460.8

(22) Date of Filing 08.09.1998

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(51) INT CL⁷
F16J 15/02, A47K 3/04

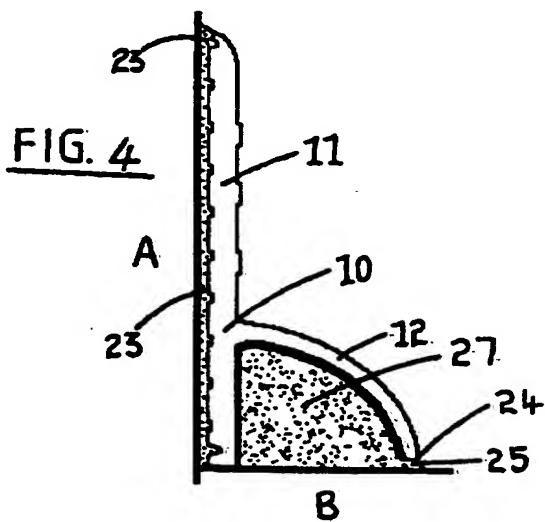
(52) UK CL (Edition R)
F2B B1B
U1S S1713

(56) Documents Cited
GB 2289984 A GB 2136288 A

(58) Field of Search
UK CL (Edition Q) A4N N1D, E1D DF112, F2B
INT CL⁶ A47K 3/04, F16J 15/02
Online: WPI, EPODOC, PAJ

(54) Abstract Title
Sealing member

(57) Sealing member (10) is adapted to be installed independently or as a component of a sealing assembly, to maintain a sealed joint between relatively vertical and horizontal surfaces (A and B) either as a straight linear or corner joint. The sealing member (10) has a first upper limb (11) for contacting the vertical surface (A) and a second outer limb (12) for containment of sealing material (27) on the horizontal surface (B). Lower face (17) Fig 1 of limb (12) and/or inner face (20) of upper limb (11) are wholly or partially layered with an anti-adherent material (13) to act as shuttering between the seal member (10) and the sealing materials.



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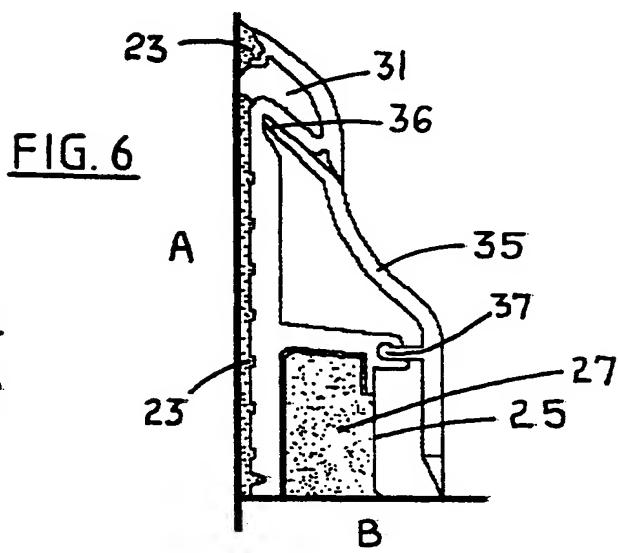
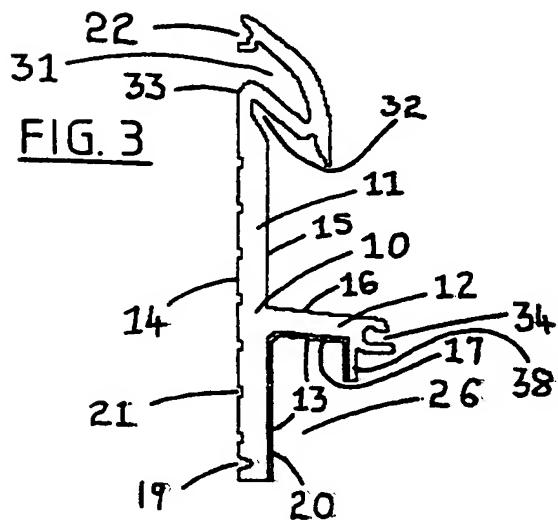
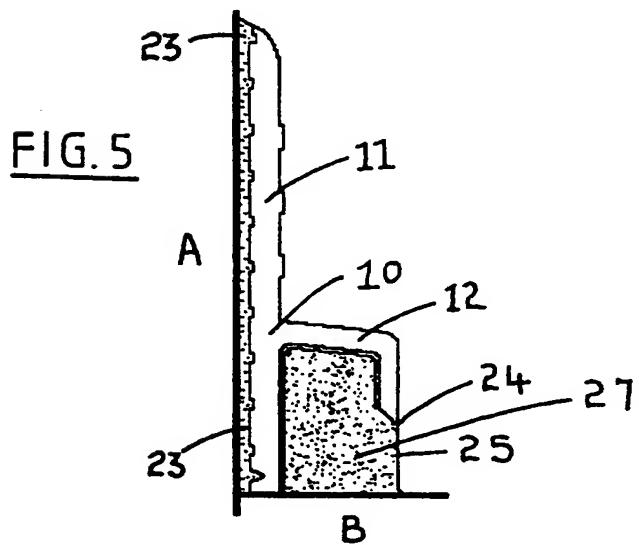
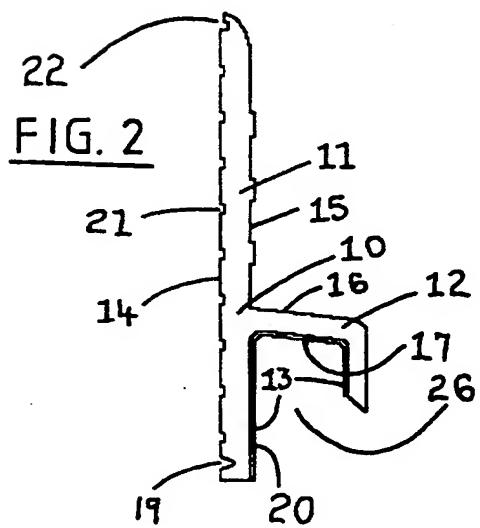
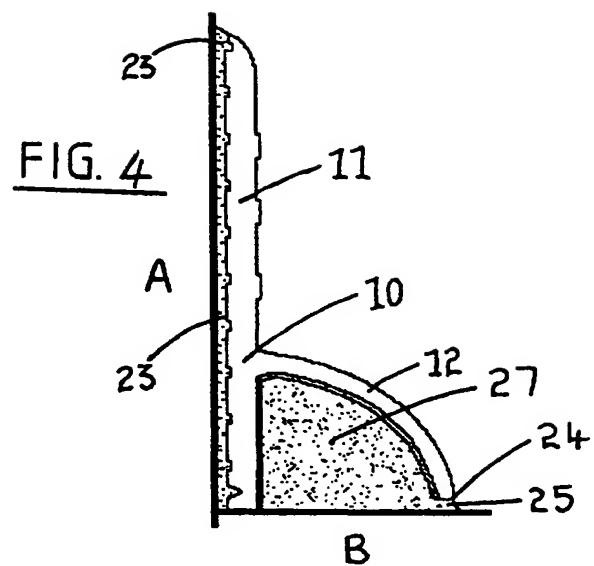
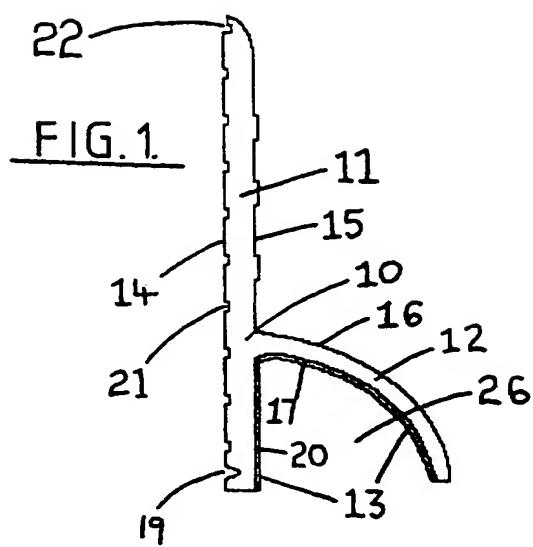
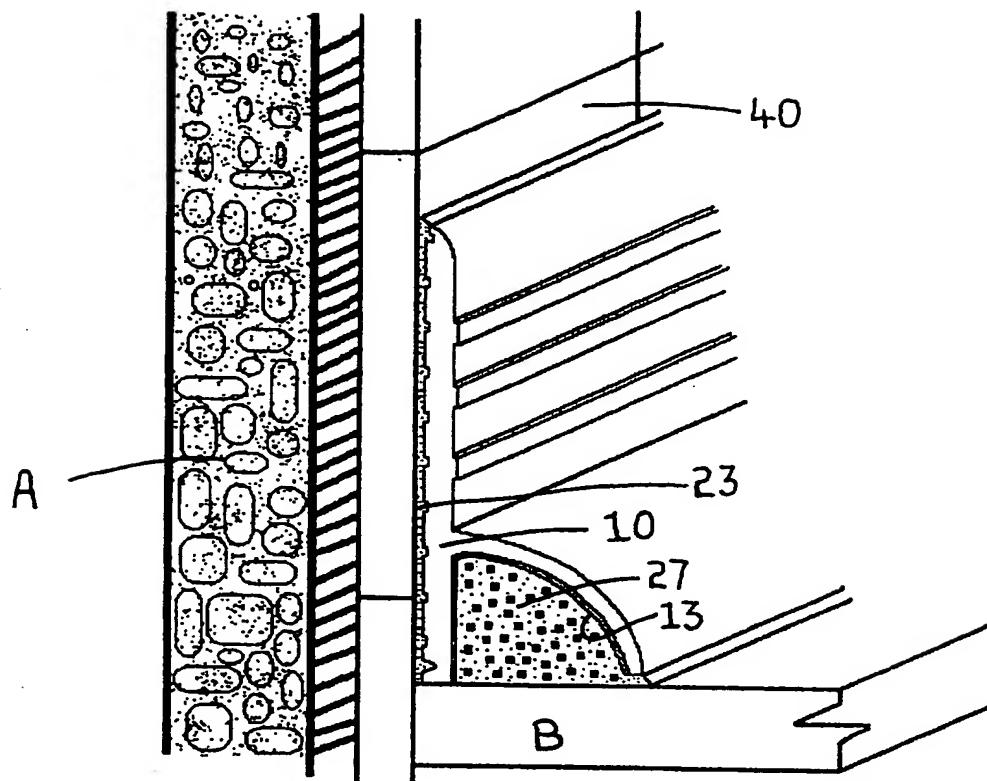
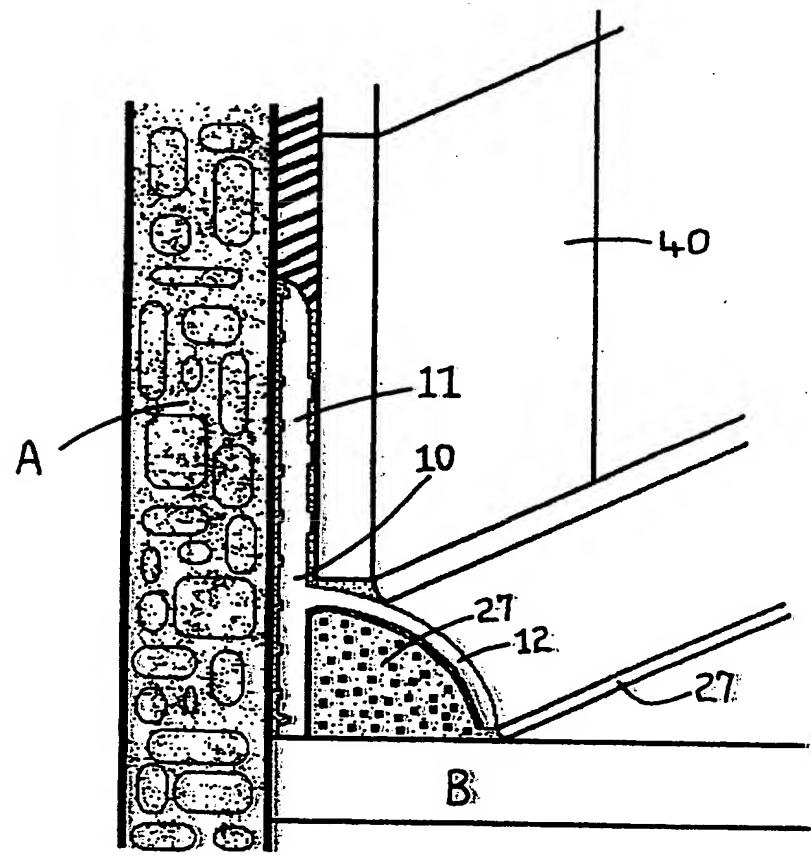
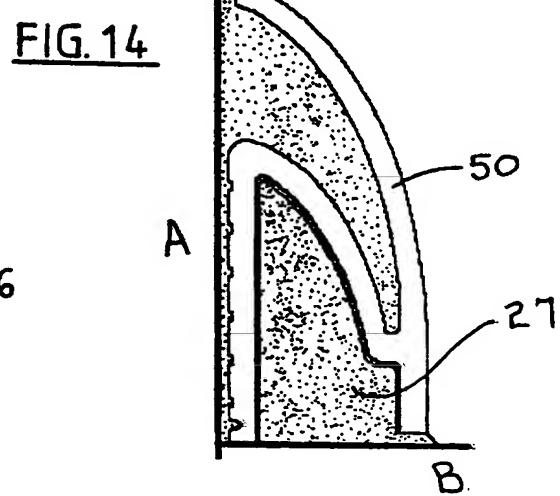
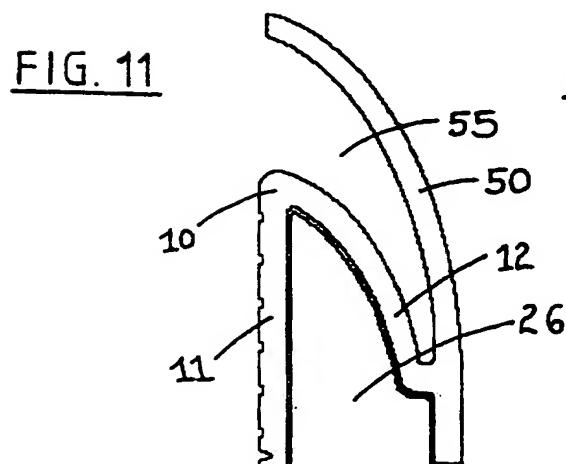
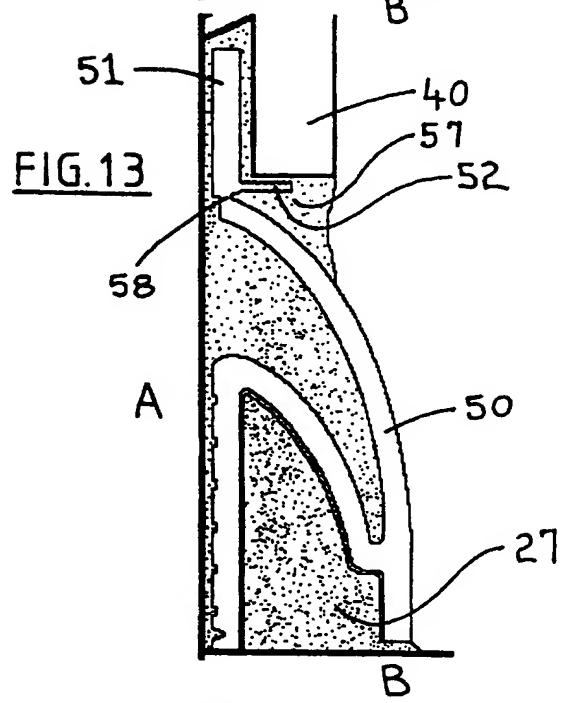
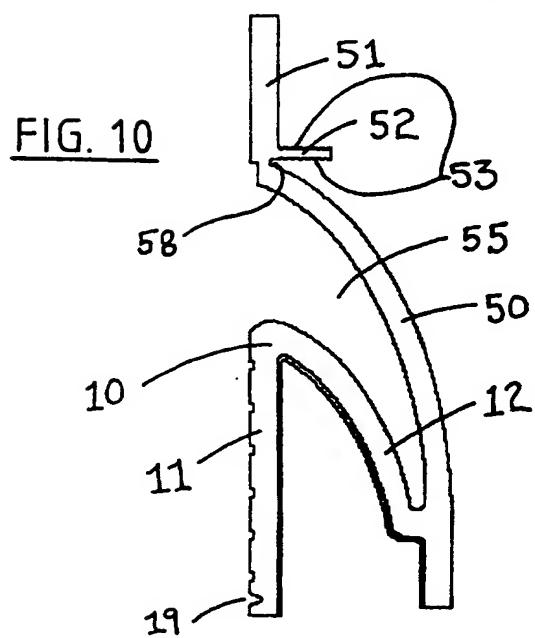
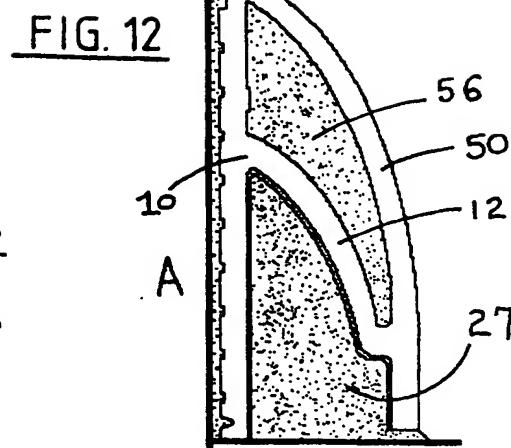
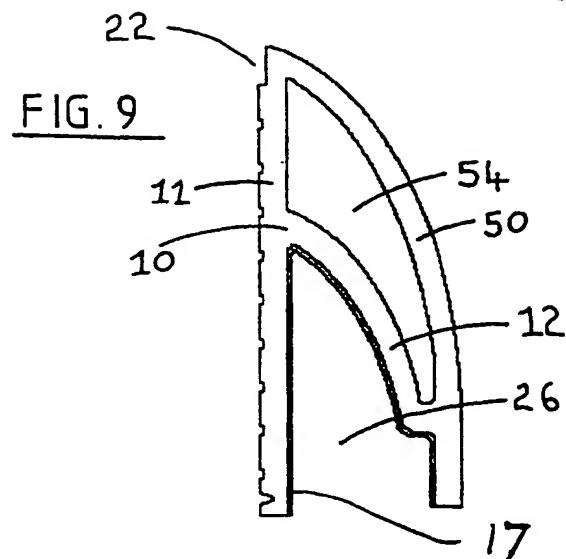


FIG. 7FIG. 8



SEALING MEMBER

The present invention relates to a seal for sealing the joint between two contiguous surfaces disposed at an angle to each other, such as, but not limited to the horizontal joint between a 5 tiled wall and a shower tray or bath.

The main prior art methods of sealing the junction of walls and horizontal surfaces (such as shower trays, baths and worktops) are as follows.

10 **METHOD A:** Semi-rigid (typically uPVC) quadrant or scotia type profile sealing strips, with or without additional components, that have soft butyl rubber sealing lips attached to the upper most and/or outer most boundaries, are surface mounted onto, or partially recessed into the wall surface, to form a seal with horizontal surfaces.

15 **METHOD B:** A sealant material (typically silicone, acrylic, or latex based) is extruded into or over the horizontal or vertical joint

METHOD C: Quadrant tiles are laid over the horizontal or vertical joint.

20 **METHOD D:** The receptacle may have an upstanding flange attached to the outermost boundary that is partially recessed into the wall and tiled over.

25 **METHOD E:** A flexible silicone/Upvc based tape has a peel off paper back adhesive strip (typically butyl rubber) attached to the inner face. The tape has a score line indicating the bending location. The peel off paper is removed and laid onto each surface defining the joint.

30 The main disadvantages of the above arrangements are that in the case of method A, soft lips perish, shrink, harden and leak in shower areas. In the case of B the exposed sealant is unsightly. In the case of A-D the corner details are poor, in some cases the sealing material is just butt jointed with glue rigidly or adhesive, and when differential movement occurs,

this joint leaks, and repairs are awkward as existing surfaces are contaminated, and the bonding of additional sealing materials difficult. In the case of E, the strips are generally regarded as having a short lift span.

5 It is the object of this invention to provide a sealing member that may readily installed, and adapted to overcome or substantially reduce the aforementioned problems.

According to the present invention there is a sealing member adapted to be installed independently or as a component of a sealing assembly, to maintain a sealed joint between 10 relatively vertical and horizontal surfaces, being either straight linear or corner joints, the sealing member comprising a first substantially rigid limb having an upper and lower boundary between which there extends on each side an inner and outer face, the outside face of which is adapted wholly or in part to be fixed and/or sealed to a relatively vertical surface, and from which inner face or boundary there extends at least one second 15 substantially rigid outer limb having an inner and outer boundary, the inner boundary of which is attached to the inside face/boundary of the first limb, and between which inner and outer boundaries there extends on each side an upper and lower face, the lower face of which is adapted wholly or in part be sealed to a relatively horizontal surface, and/or accommodate and retain a sealing material between the said lower face and the horizontal 20 surface, whereby the first limb inside face and/or the second limb lower face is wholly or in part layered with an anti-adherent material to form a releasable shuttering for sealing material that may be applied into the cavity formed between the first limb inside face and/or the second limb lower face and the adjacent second surface, thereby providing a continuous up-standing containment cavity for the applied sealant that will form a 25 boundary wall bonded to the horizontal surface, yet wholly or partially independent and/or releasable from the seal member to which initially attached.

30 Preferably the anti-adherent material is typically though not exclusively a polythene tape, and/or an anti-stick film spray, and/or a co-extruded material and/or a complementary extrusion.

Advantageously the first and/or second limbs are adapted to drain off water that may fall there on, and/or engage complementary seal members.

5 The outside face of the first limb has a plurality of ridges and/or recesses and/or contact points and/or holes to accommodate fixing and/or sealing materials.

Preferably the width of the first limb may be reduced through the provision of at least one weakening score line defining a longitudinal area along the lower boundary that may be easily removed, to determine the gap between the second limb and the second surface.

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In one embodiment the second limb profile is wholly and/or in series combination, convex and/or concave and/or planer.

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In an alternative embodiment the second limb is flexibly adapted to accommodate the retro-application of a sealing material under and/or behind the second limb and/or accommodate lateral movement of the sealing material away from the first limb.

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Optionally the second limb is adapted to determine the amount of sealing material engaged between the first limb inside face and/or the second limb lower face and the adjacent second surface.

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Advantageously the second limb is partially adapted to extend onto or above the first limb to encompass a sealant reservoir against the vertical surface, and overlap the sealant reservoir encompassed between the first limb and/or the second limb and the horizontal surface.

Optionally the upper seal member boundary is adapted to be engaged between the vertical surface and an applied covering, and/or adapted to support said applied covering.

Preferably the said adapted supporting upper seal member boundary may be optionally removed through the provision of at least one weakening score line below the said adaptation, defining a longitudinal area that may be easily removed.

5 This seal member may be installed using a butyl rubber and/or a sealing/adhesive material being typically though not exclusively, an extrudable flexible self curing silicone type sealing compound adapted to seal the first and/or second limbs to their adjacent surfaces, and be applied into the enclosed end cavity formed with the second surface, and join the cavities of two meeting sealing members.

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Alternatively the uppermost and outermost boundaries of the sealing member is flexible and adapted to sealingly engage their adjacent surfaces typically through the provision of a co-extruded flexible nitrile modified vinyl.

15 The invention will hereinafter be more particularly described with reference to the accompanying drawings, which show by way of example only, embodiments of the seal according to the invention, in these drawings :-:

20 Figures 1 to 3 represent sectional views of three alternate embodiments of the sealing member according to the current invention.

Figures 4 to 6 represent respectively sectional views the first three embodiments of the sealing member installed between two surfaces.

25 Figures 7 and 8 represent perspective views of the sealing profile detailed in figures 1 and 4, whereby in figure 7 the seal is installed over tiles, and in figure 8 it is partially installed under tiles fixed to the wall.

30 Figures 9 to 11 represent sectional views of three further alternate embodiments of the sealing member according to the current invention.

Figures 12 to 14 represent respectively sectional views the second three embodiments of the sealing member installed between two surfaces.

5 Figures 1 and 2 detail a section the sealing member 10 which has a first upper limb 11 for contacting a generally vertical surface A, and a second outer limb 12 for contacting a generally horizontal surface B.

10 The outer face 14 of the upper limb 11 has a series of recesses 21 to accommodate the gripping and storage of an adhesive sealant material 23.

15 The upper boundary outer face 14 of the upper limb 11 has a reservoir 22 to retain a sealant 23, while the lower outer face 14 of the upper limb 11 is scored through rebate 19, to accommodate easy removal if required.

20 Extending outward from the inner face 15 of upper limb 11 is limb 12. The upper face 16 of outer limb 12 is directed downward to accommodate the flow of water, while the gap 25 between the outermost boundary line 24 of limb 12 and the horizontal surface B may be reduced through the removal of the lowermost part of limb 11, below the score line 19.

25 A continuous sealing material 27 is applied into the enclosed cavity 26. The boundary sides of this cavity 26 provide a form-work or shuttering for the sealing material, the height and width of which may be dictated by the lower face profile 17 of limb 12, as desired.

30 The lower face 17 of limb 12, and/or the inner face part 20 of upper limb 11 is wholly or partially layered with an anti-adherent material 13. One such material is 50micron polythene tape coated on one side with pressure sensitive adhesive that is applied against surfaces as required.

35 The polythene tape 13 provides a low energy surface to which the sealant material, typically silicone 27, will not strongly adhere when cured. The tape may be applied onto

one seal surface only assume part side 20 of limb 11, if it is desired to achieve a sealant bond between surface B and surface 17 of limb 12 or parts thereof.

5 The silicone 27 will form a strong bond with surface B, to create a continuous 'boundary wall' on and over surface B, and be releasably independent of the seal member, as movement of surface A may require.

The outer limb 12 may be flexible to allow lateral movement of the sealing material 27.

10 Figures 1 and 2 and their respective counterparts figures 4 and 5 contain basically similar features. Figure 3 and it's counterpart figure 6, detail a third embodiment according to the invention, whereby the sealing member is adapted to engage other seal members as desired.

15 In this embodiment the upper part 33 of limb 11 is adapted to retain in angle 32, the upper boundary 36 of a complementary seal member 35 and provide an overhanging sealant reservoir 31, while the outer part 34 of limb 12 is adapted to complementarily engage the clip-on leg detail 37 of said member 35.

20 The lower boundary 38 of limb 12 provides a track that determines the amount of sealant material 27 applied into the cavity 26 that is formed when the sealing member is installed over surface B.

25 Figures 7 and 8 represent perspective views of the sealing profile detailed in figures 1 and 4 whereby in figure 7 the sealing member 10 is installed over the tiles 40 with a adhesive/sealing material which may be typically though not exclusively silicone or a butyl rubber compound 23.

Figure 8 details the sealing member 10 with the upper region of the upper limb 11 sandwiched between the vertical surface A and the tiles 40.

Figures 9 and 12 detail an embodiment whereby the upper most boundary of the second limb 12 (part of which is limb 50), is attached to the first limb 11, to form a cavity 55 which may be filled with a sealant 56 when seal members are joined together.

- 5 Figures 10 and 13 detail an embodiment whereby upper most boundary of the second limb 12 (part of which is limb 50), is unattached to the first limb 11, but adapted to be engaged between a vertical surface and wall covering 40, typically tiles, through limb 51, which in itself is adapted through limb 52, to support the said wall covering.
- 10 The upper and lower faces of limb 52 are ribbed to encourage the strong adherence of sealant 57. The joint between limb 50 and the attached limbs 51 and 52 is weakened at 58 to enable the easy detachment when the seal member is being installed over the wall covering.
- 15 Figures 11 and 14 detail respectively the seal member described in figures 10 and 13, but in a surface mounted application, without limbs 51 and 52 attached.

Typical locations for this seal in are in shower enclosures, wherein the seal is installed longitudinally onto wall over the joint created by the tray or bath and adjacent walls.

- 20 A typical installation method will now be described, taking by way of a subject, a shower tray installation. Our installation details will relate to the first seal embodiment, being a single seal member only and incorporate the typical use of the seal member and a silicone sealant.
- 25 Three lengths of seal are required, a first length will have two mitre cuts and be installed between two corners, while a second and third lengths will have one mitre cut each, to complement each end of the first seal length. Measure the first length and cut a mitre on each end; measure and cut the second and third lengths, cutting the complementary mitres: 30 on one end, and a square cut on the other.

Lay the seal members unsealed into their intended position, and fix protective tape onto the wall directly over the uppermost boundary line. Starting with the double mitred length, extrude sealant onto the vertical surfaces about to be sealed. Extrude sealant into the seal cavity. Fix seal member into intended location against the wall and down against the

5 shower tray.

Carry out the same procedure for the second and third seal members caulking each end, bonding the sealants together at the mitred joints.

10 Rub up the sealant and remove and the tape.

It will of course be understood that the invention is not limited to the specific details described herein, which are given by way of example only, and that various modifications and alterations are possible within the scope of the invention as defined in the appended

15 claims.

CLAIMS:

1. A sealing member adapted to be installed independently or as a component of a sealing assembly, to maintain a sealed joint between relatively vertical and horizontal surfaces, being either straight linear or corner joints, the sealing member comprising a first substantially rigid limb having an upper and lower boundary between which there extends on each side an inner and outer face, the outside face of which is adapted wholly or in part to be fixed and/or sealed to a relatively vertical surface, and from which inner face or boundary there extends at least one second substantially rigid outer limb having an inner and outer boundary, the inner boundary of which is attached to the inside face and/or boundary of the first limb, and between which inner and outer boundaries there extends on each side an upper and lower face, the lower face of which is adapted wholly or in part be sealed to a relatively horizontal surface, and/or accommodate and retain a sealing material between the said second limb lower face and the horizontal surface, whereby the first limb inside face and/or the second limb lower face is wholly or in part layered with an anti-adherent material to form a releasable shuttering for sealing material that may be applied into the cavity formed between the first limb inside face and/or the second limb lower face and the adjacent second surface, thereby providing a continuous up-standing containment cavity for the applied sealant that will form a boundary wall bonded to the horizontal surface, yet wholly or partially independent and/or releasable from the seal member to which initially attached.
2. A sealing member as claimed in claim 1, wherein the anti-adherent material is typically though not exclusively a polythene tape, and/or an anti-stick film spray, and/or a co-extruded material and/or a complementary extrusion.
3. A sealing member as claimed in any one of the preceding claims, wherein the first and/or second limbs are adapted to drain off water that may fall there on and/or engage complementary seal members.

4. A sealing member as claimed in any one of the preceding claims, wherein the outside face of the first limb has a plurality of ridges and/or recesses and/or contact points and/or holes to accommodate fixing and/or sealing adhesive materials.
5. A sealing member as claimed in any one of the preceding claims, wherein the width of the first limb may be reduced through the provision of at least one weakening score line, defining a longitudinal area along the lower boundary that may be easily removed, to determine the gap between second limb and the second surface.
- 10 6. A sealing member as claimed in any one of the preceding claims, wherein the second limb profile is wholly and/or in any series combination, convex and /or concave and/or planer.
- 15 7. A sealing member as claimed in any one of the preceding claims, wherein the second limb is flexibly adapted to accommodate the retro-application of a sealing material under and/or behind the second limb and/or accommodate lateral movement of the sealing material away from the first limb.
- 20 8. A sealing member as claimed in any one of the preceding claims, wherein the second limb is adapted to determine the amount of sealing material engaged between the first limb inside face and/or the second limb lower face and the adjacent second surface.
- 25 9. A sealing member as claimed in any one of the preceding claims, wherein the second limb is partially adapted to extend onto or above the first limb to encompass a sealant reservoir against the vertical surface, and overlap the sealant reservoir encompassed between the first limb and/or the second limb and the horizontal surface.
- 30 10. A sealing member as claimed in any one of the preceding claims, wherein the upper seal member boundary is adapted to be engaged between the vertical surface and an applied covering, and/or adapted to support said applied covering.

11. A sealing member as claimed in Claim 10, wherein the said adapted supporting upper seal member boundary may be optionally removed through the provision of at least one weakening score line below the said adaptation, defining a longitudinal area that may be easily removed.

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12. In combination a sealing member as claimed in any one of the preceding claims and a butyl rubber and/or a sealing/adhesive material being typically though not exclusively, an extrudable flexible self curing silicone type sealing compound adapted to seal the first and/or second limbs to their adjacent surfaces, and be applied into the 10 enclosed end cavity formed with the second surface, and join the cavities of two meeting sealing members.

13. A sealing member as claimed in any one of the preceding claims, wherein the uppermost and outermost boundaries of the sealing member is flexible and adapted to 15 sealingly engage their adjacent surfaces typically through the provision of a co-extruded flexible nitrile modified vinyl.

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14. A method of sealing joints between two surfaces disposed at an angle to each other with reference to accompanying drawings.

15. A sealing member substantially in accordance with any of the embodiments as herein described with reference to and as shown in the accompanying drawings.



Application No: GB 9819460.8
Claims searched: 1 - 13

Examiner: Tom Sutherland
Date of search: 3 February 1999

Patents Act 1977
Amended Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): F2B, A4N (N1D), E1D (DF112)

Int Cl (Ed.6): F16J 15/02, A47K 3/04

Other: Online: WPI, EPODOC, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2289924 A (MCCOMB) Note Fig. 5.	
A	GB 2136288 A (DISPLAY TILING)	

<input checked="" type="checkbox"/> X Document indicating lack of novelty or inventive step	<input type="checkbox"/> A Document indicating technological background and/or state of the art.
<input checked="" type="checkbox"/> Y Document indicating lack of inventive step if combined with one or more other documents of same category.	<input type="checkbox"/> P Document published on or after the declared priority date but before the filing date of this invention.
<input checked="" type="checkbox"/> & Member of the same patent family	<input type="checkbox"/> E Patent document published on or after, but with priority date earlier than, the filing date of this application.